FIG.1

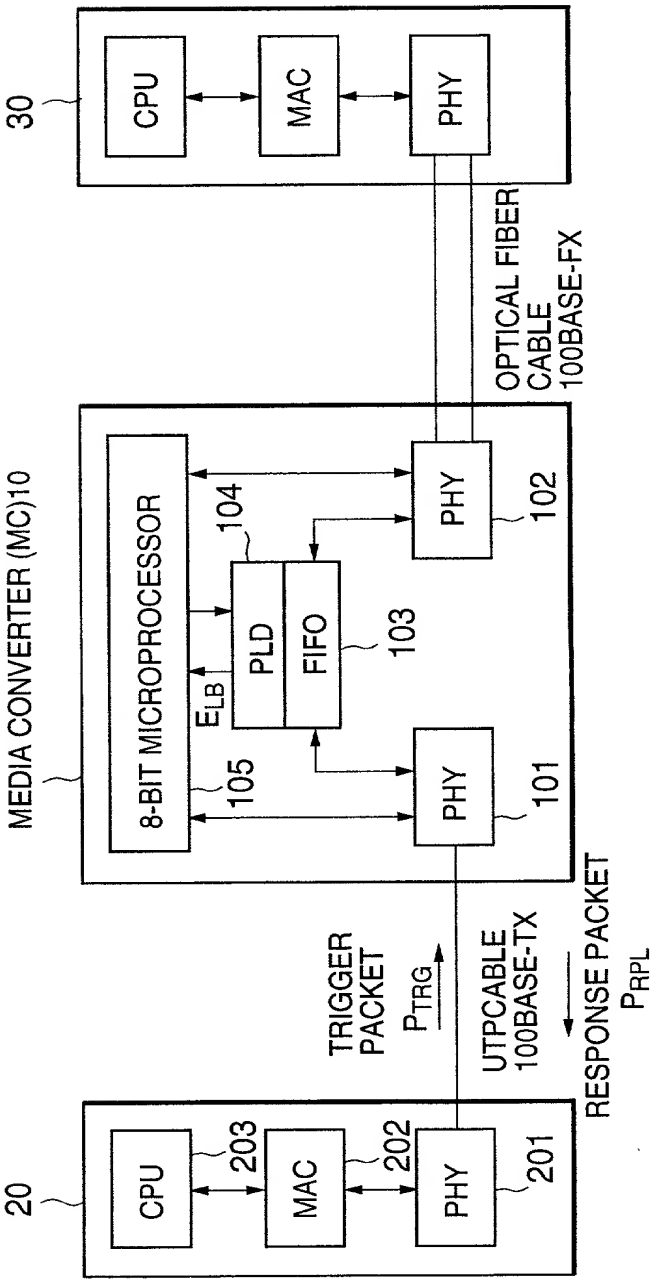

30
CPU
MAC
PHY
OPTICAL FIBER CABLE 100BASE-FX
MEDIA CONVERTER (MC)10
8-BIT MICROPROCESSOR
104
PLD
FIFO
103
ELB
105
PHY
102
PHY
101
TRIGGER PACKET
PTRG
UTPCABLE 100BASE-TX
RESPONSE PACKET
PRPL
20
CPU
203
MAC
202
PHY
201

FIG.2

ETHERNET PACKET INCLUDING TRIGGER DATA

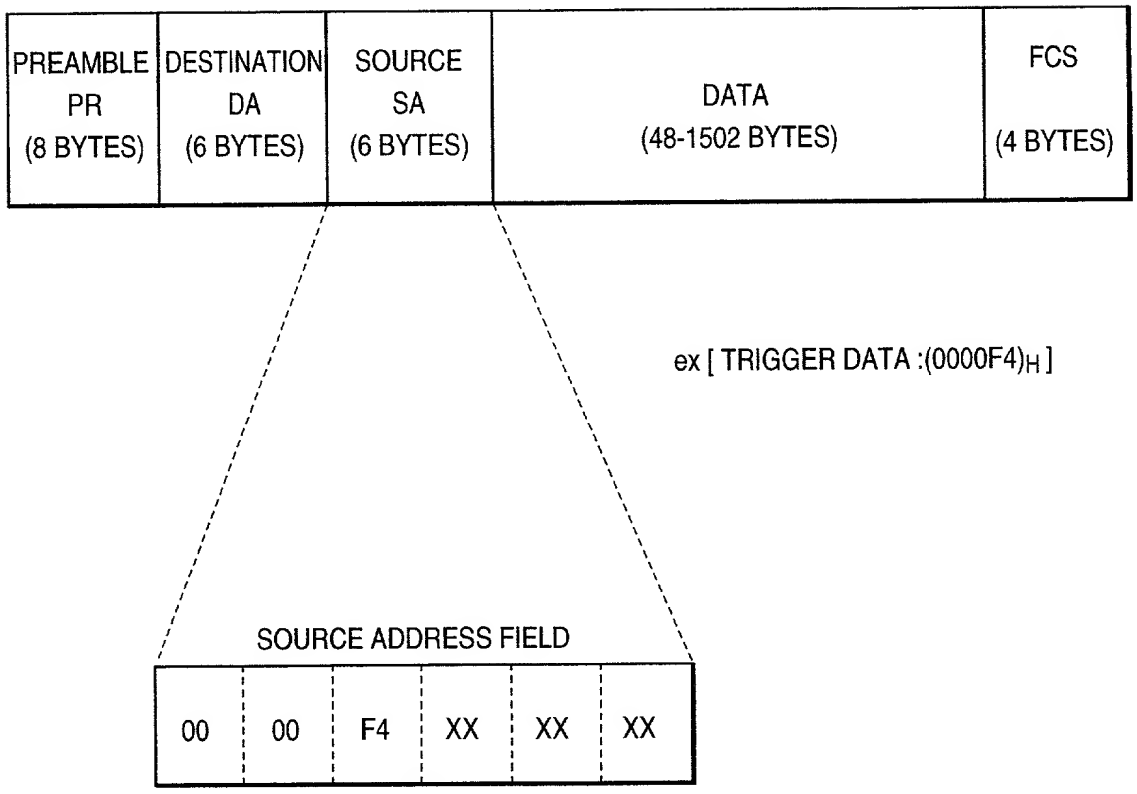


FIG.3

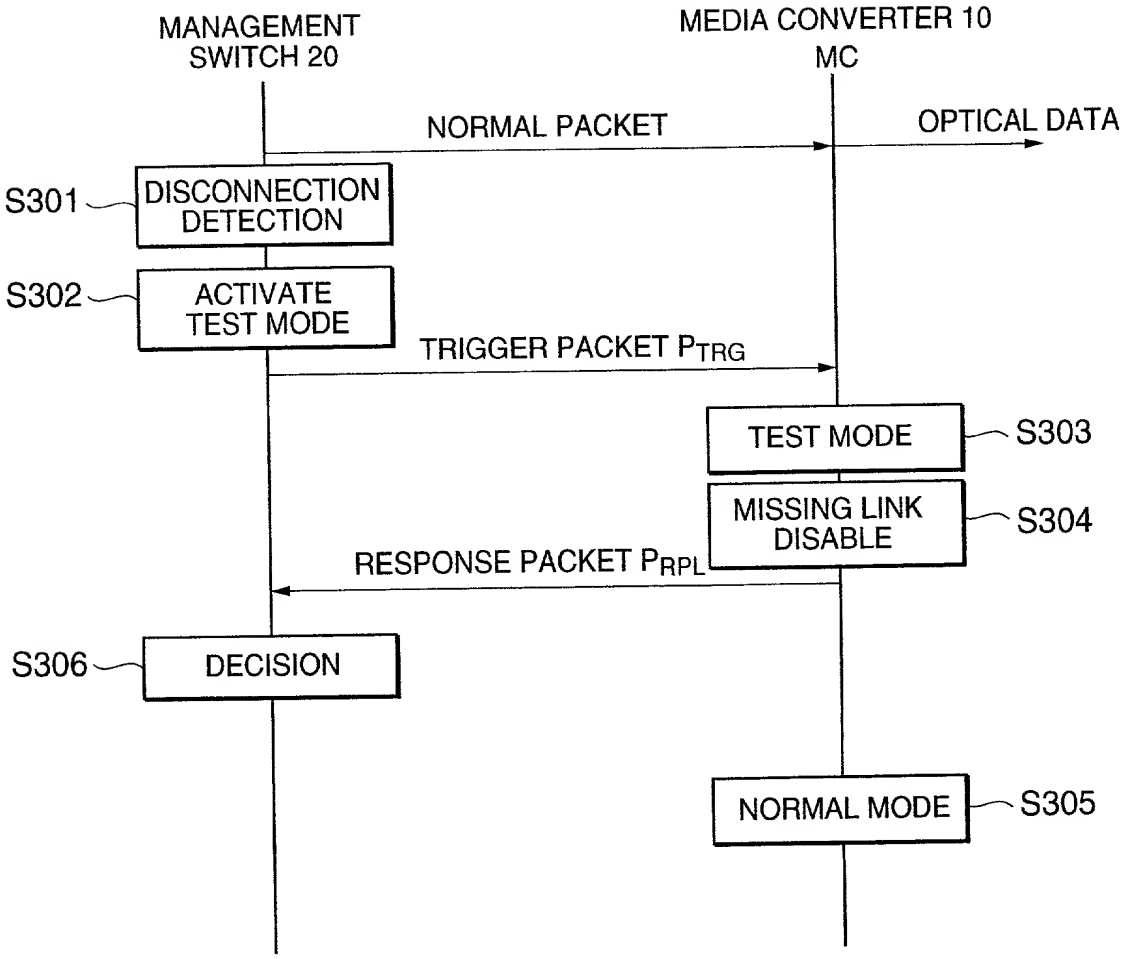

MANAGEMENT SWITCH 20
MEDIA CONVERTER 10 MC
NORMAL PACKET
OPTICAL DATA
S301
DISCONNECTION DETECTION
S302
ACTIVATE TEST MODE
TRIGGER PACKET PTRG
TEST MODE
S303
MISSING LINK DISABLE
S304
RESPONSE PACKET PRPL
S306
DECISION
NORMAL MODE
S305

FIG.4

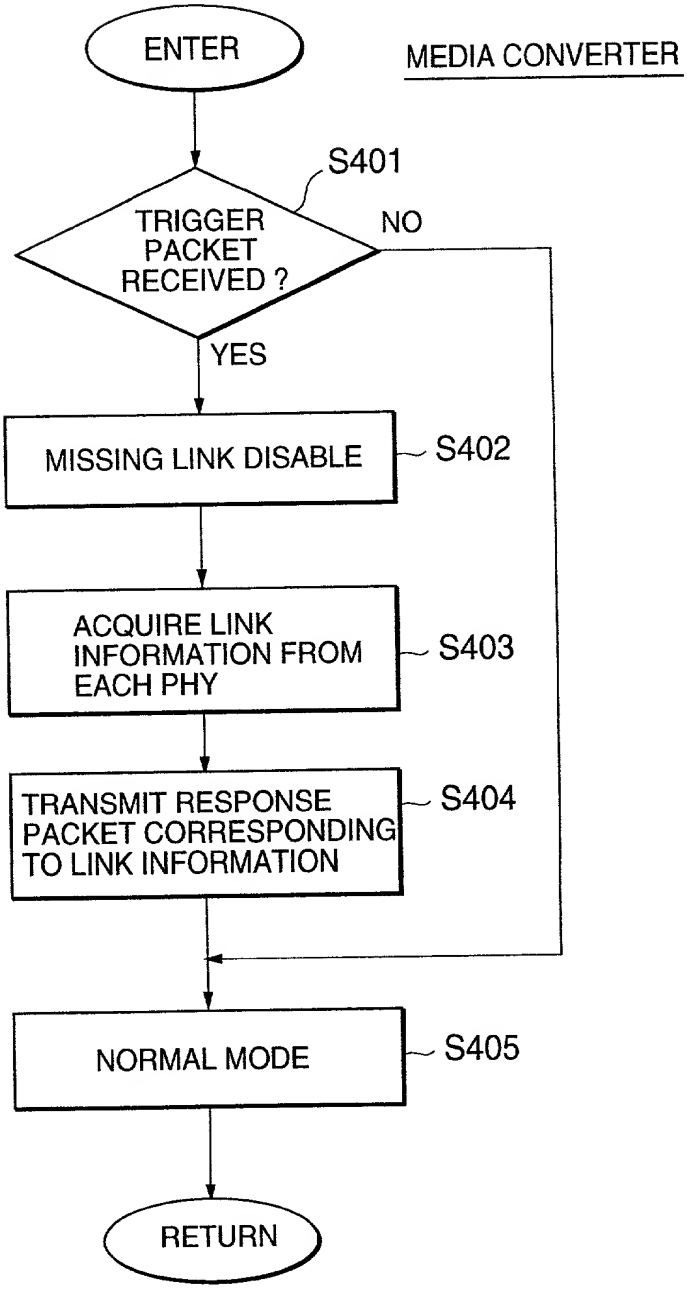

ENTER
MEDIA CONVERTER
S401
TRIGGER PACKET RECEIVED ?
NO
YES
MISSING LINK DISABLE
S402
ACQUIRE LINK INFORMATION FROM EACH PHY
S403
TRANSMIT RESPONSE PACKET CORRESPONDING TO LINK INFORMATION
S404
NORMAL MODE
S405
RETURN

FIG.5

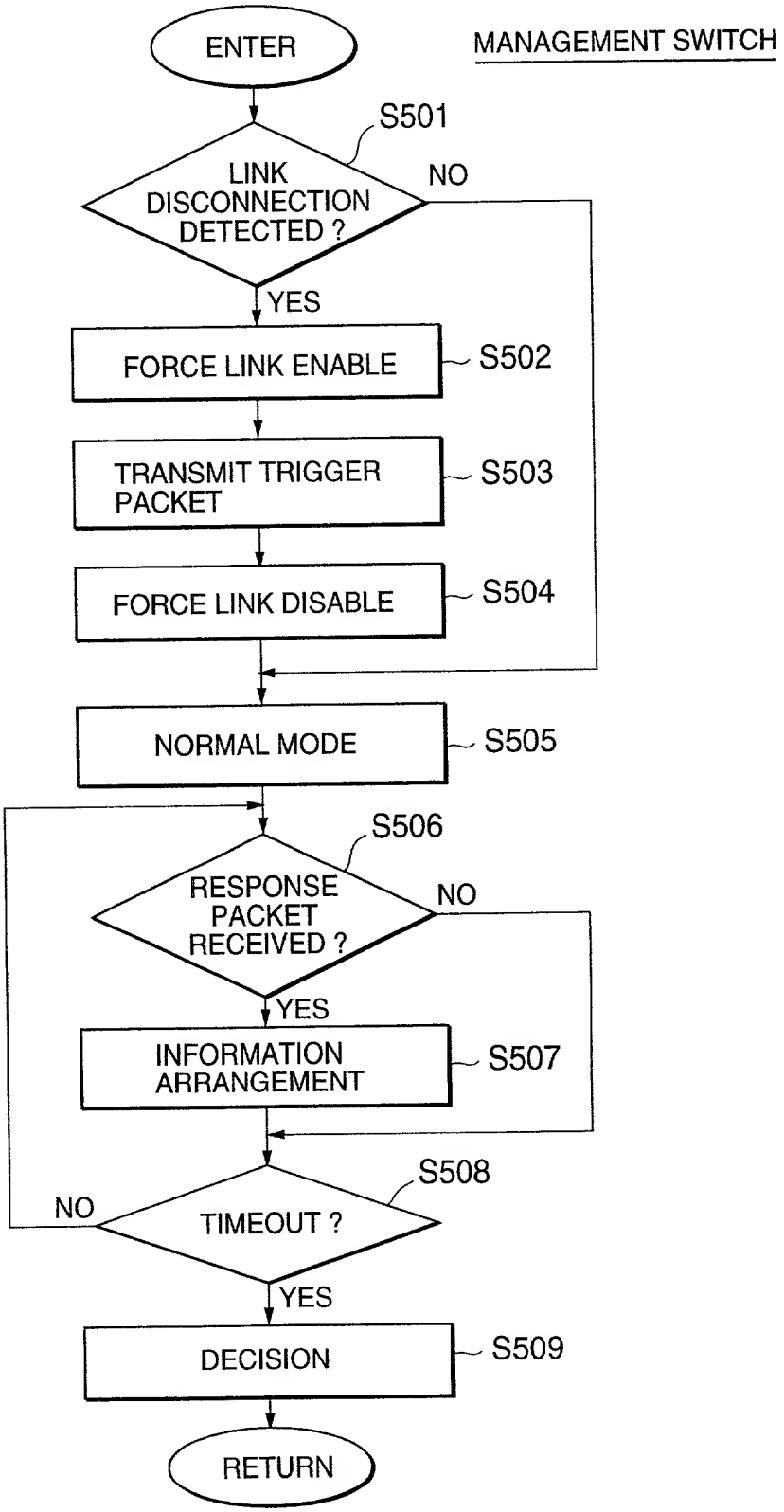

ENTER
MANAGEMENT SWITCH
S501
LINK DISCONNECTION DETECTED ?
NO
YES
FORCE LINK ENABLE
S502
TRANSMIT TRIGGER PACKET
S503
FORCE LINK DISABLE
S504
NORMAL MODE
S505
S506
RESPONSE PACKET RECEIVED ?
NO
YES
INFORMATION ARRANGEMENT
S507
S508
NO
TIMEOUT ?
YES
DECISION
S509
RETURN

FIG.6

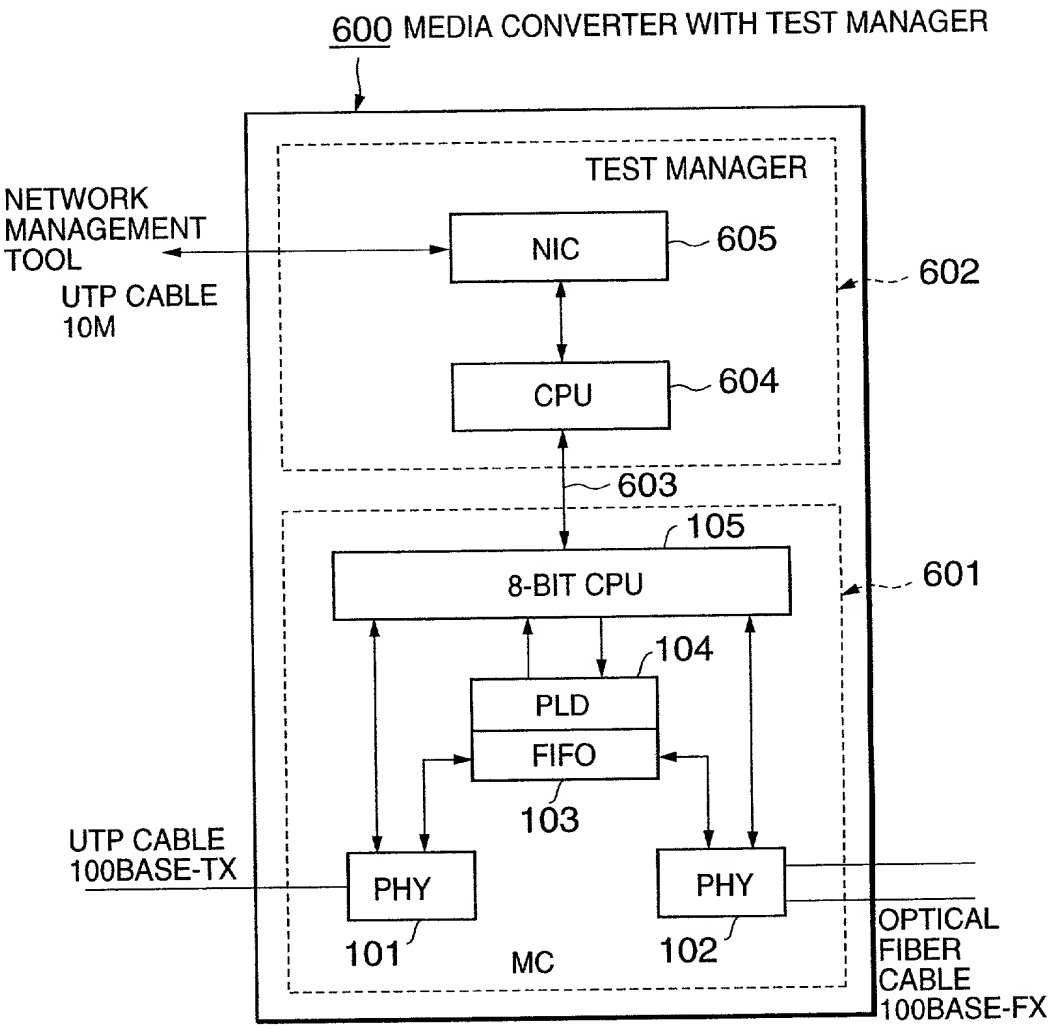

600 MEDIA CONVERTER WITH TEST MANAGER
TEST MANAGER
NETWORK MANAGEMENT TOOL
UTP CABLE 10M
NIC
605
602
CPU
604
603
105
8-BIT CPU
601
104
PLD
FIFO
103
UTP CABLE 100BASE-TX
PHY
PHY
101
MC
102
OPTICAL FIBER CABLE 100BASE-FX

FIG.7

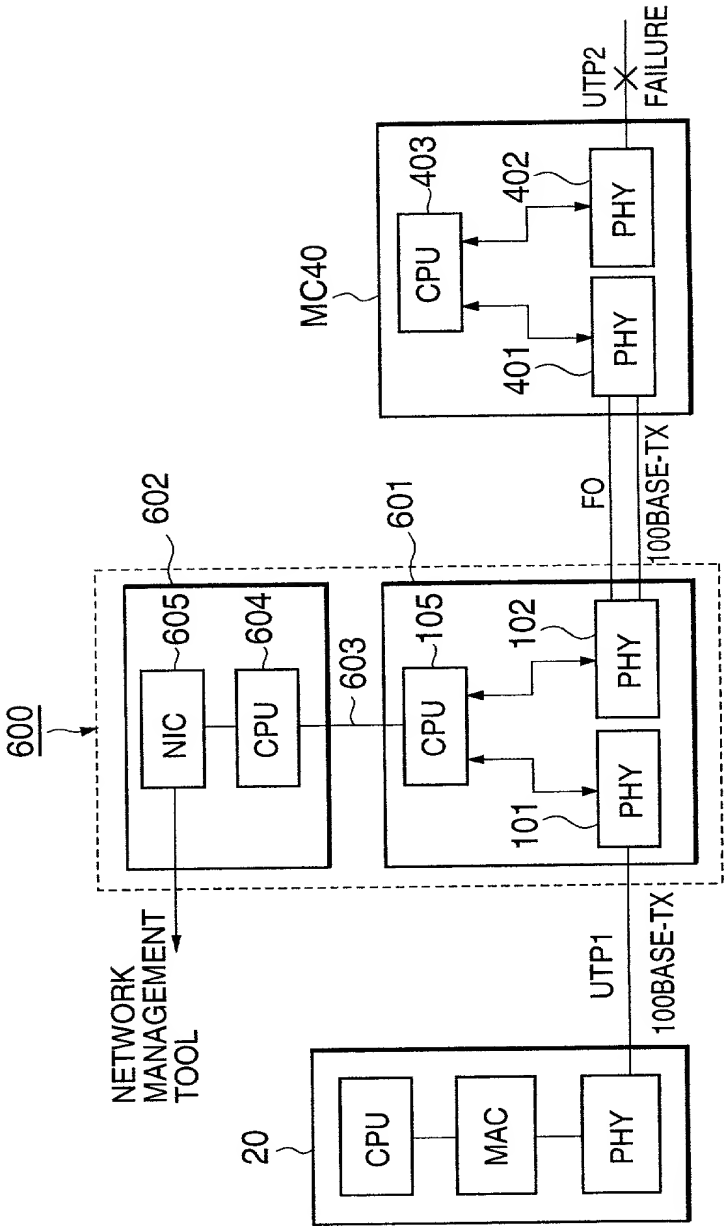

600
602
601
NIC
605
CPU
604
603
CPU
105
102
PHY
PHY
101
NETWORK MANAGEMENT TOOL
UTP1
100BASE-TX
FO
100BASE-TX
UTP2
FAILURE
MC40
CPU
403
402
PHY
PHY
401
20
CPU
MAC
PHY

FIG.8

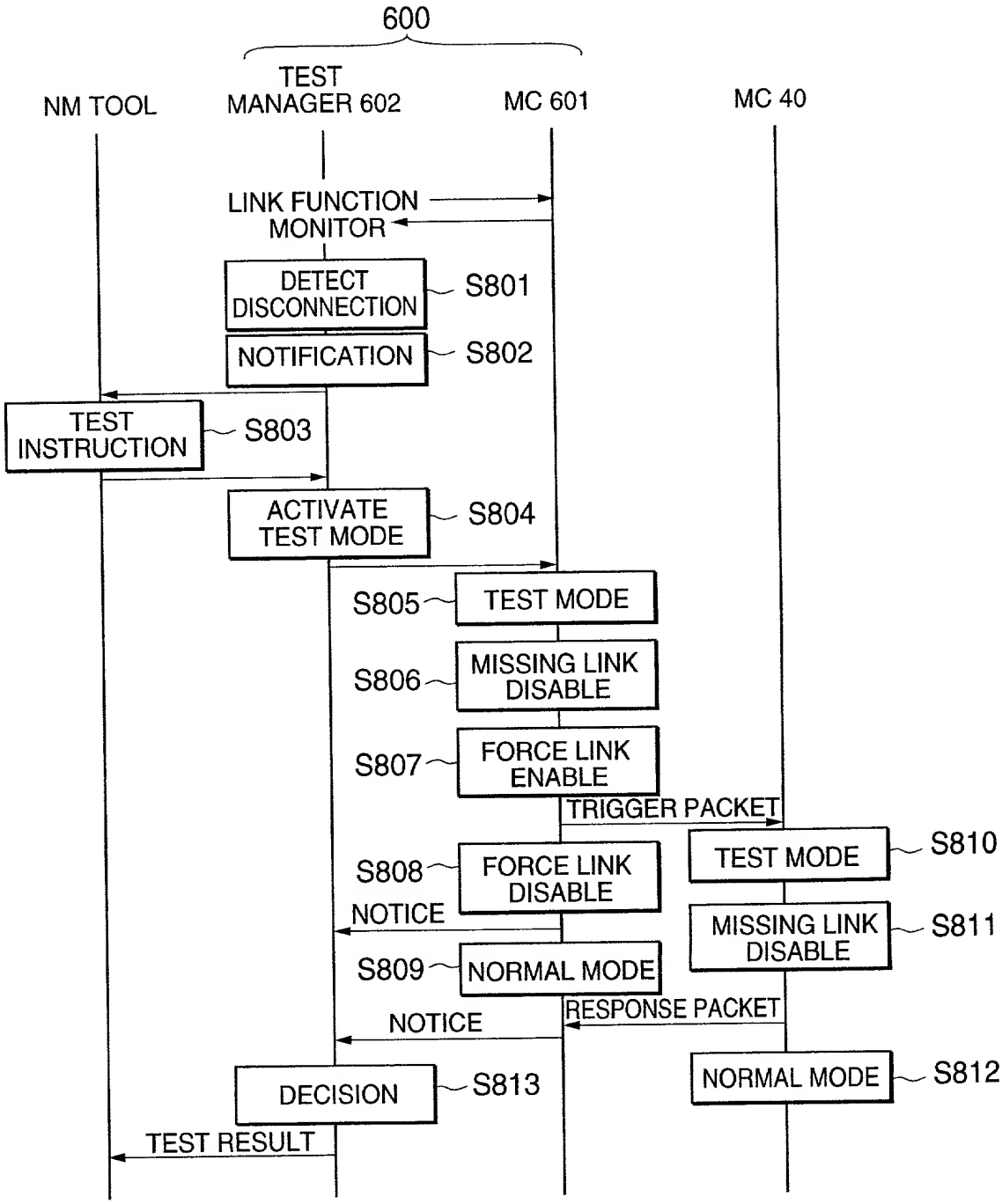

600
TEST MANAGER 602
NM TOOL
MC 601
MC 40
LINK FUNCTION MONITOR
DETECT DISCONNECTION
S801
NOTIFICATION
S802
TEST INSTRUCTION
S803
ACTIVATE TEST MODE
S804
S805
TEST MODE
S806
MISSING LINK DISABLE
S807
FORCE LINK ENABLE
TRIGGER PACKET
TEST MODE
S810
S808
FORCE LINK DISABLE
NOTICE
MISSING LINK DISABLE
S811
S809
NORMAL MODE
RESPONSE PACKET
NOTICE
NORMAL MODE
S812
DECISION
S813
TEST RESULT

FIG.9

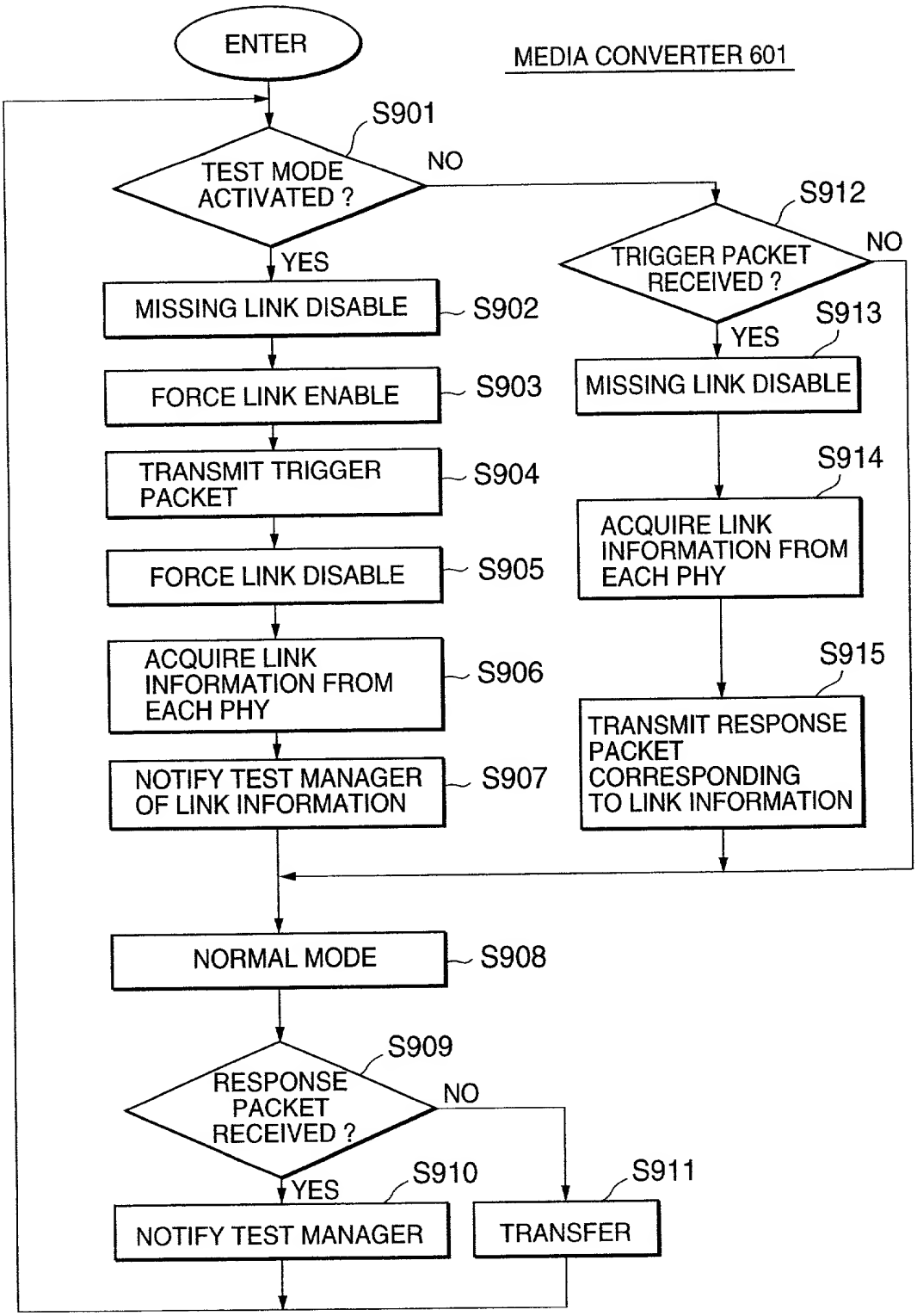

ENTER
MEDIA CONVERTER 601
S901
TEST MODE ACTIVATED ?
NO
YES
S912
TRIGGER PACKET RECEIVED ?
NO
YES
MISSING LINK DISABLE
S902
FORCE LINK ENABLE
S903
TRANSMIT TRIGGER PACKET
S904
FORCE LINK DISABLE
S905
ACQUIRE LINK INFORMATION FROM EACH PHY
S906
NOTIFY TEST MANAGER OF LINK INFORMATION
S907
S913
MISSING LINK DISABLE
S914
ACQUIRE LINK INFORMATION FROM EACH PHY
S915
TRANSMIT RESPONSE PACKET CORRESPONDING TO LINK INFORMATION
NORMAL MODE
S908
S909
RESPONSE PACKET RECEIVED ?
NO
YES
S910
NOTIFY TEST MANAGER
S911
TRANSFER

FIG.10

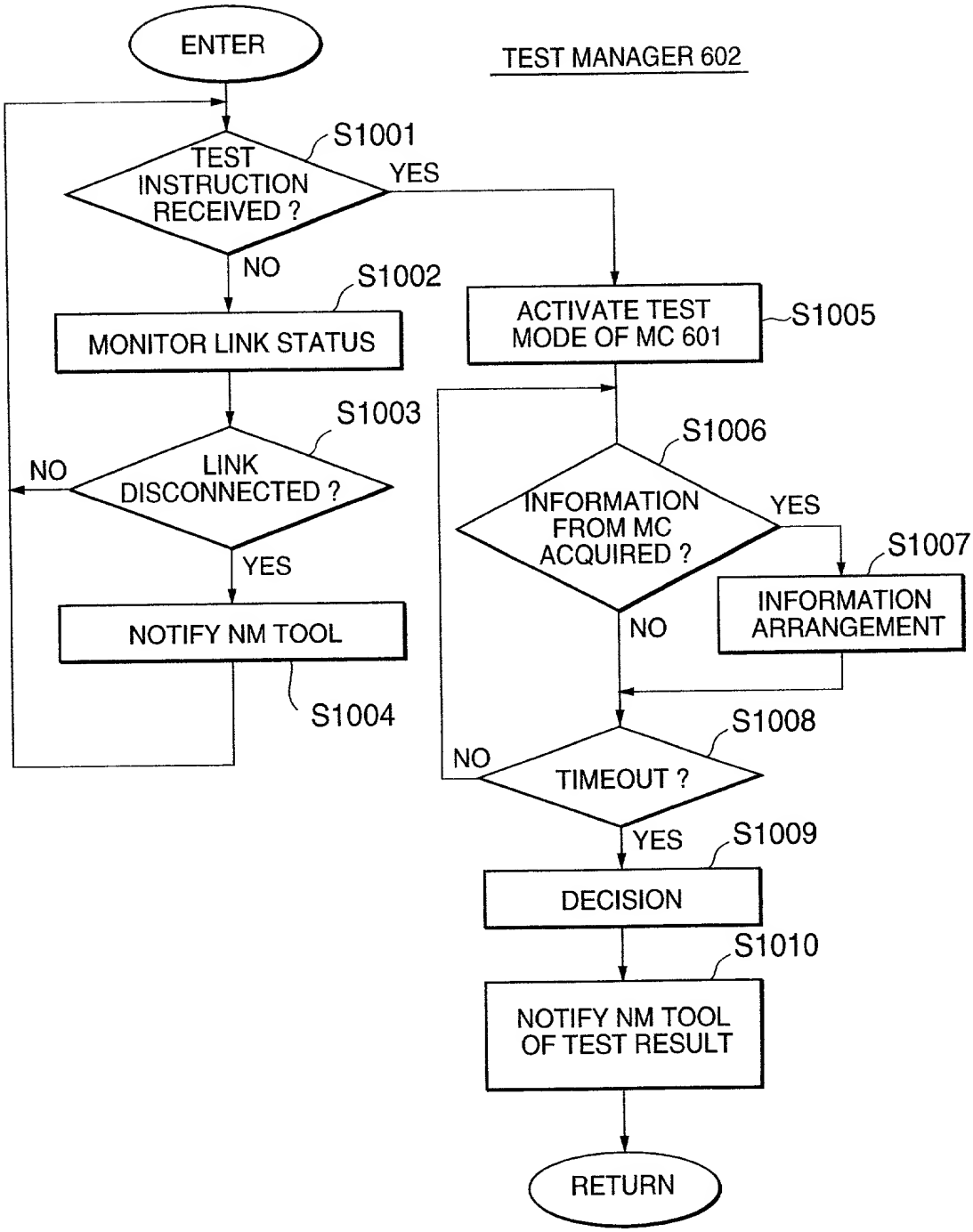
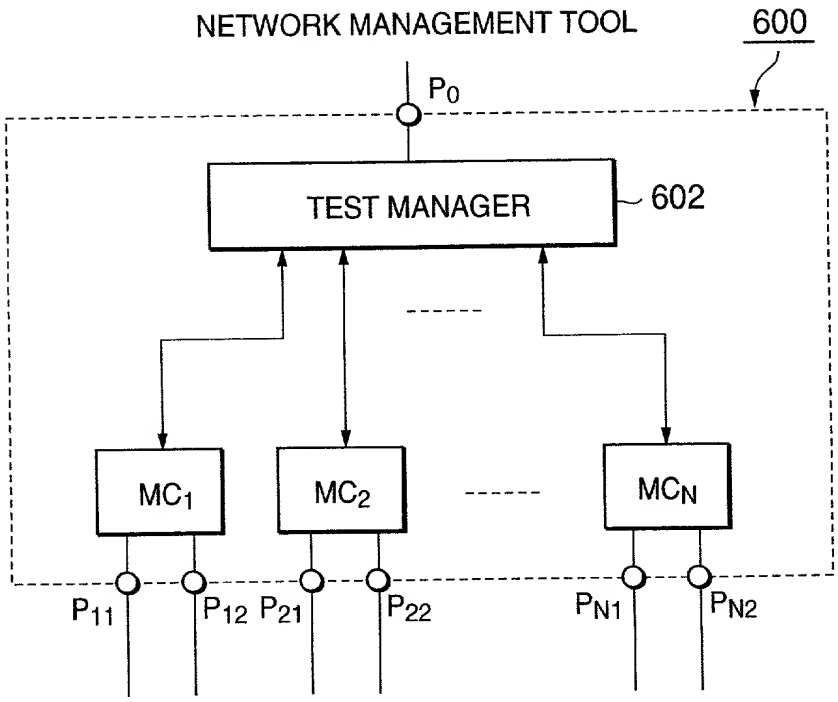

ENTER
TEST MANAGER 602
S1001
TEST INSTRUCTION RECEIVED ?
YES
NO
S1002
MONITOR LINK STATUS
S1003
LINK DISCONNECTED ?
NO
YES
NOTIFY NM TOOL
S1004
ACTIVATE TEST MODE OF MC 601
S1005
S1006
INFORMATION FROM MC ACQUIRED ?
YES
S1007
INFORMATION ARRANGEMENT
NO
S1008
NO
TIMEOUT ?
YES
S1009
DECISION
S1010
NOTIFY NM TOOL OF TEST RESULT
RETURN

FIG.11


NETWORK MANAGEMENT TOOL
600
P0
TEST MANAGER
602
MC1
MC2
MCN
P11
P12
P21
P22
PN1
PN2